

Patent Application of Wayne O. Hadland for "Support Fixture  
for Food Plate and Beverage Container" continued

CLAIMS: I claim:

1. A hand-held corrugated-fiberboard support fixture for supporting a beverage container and for supporting a food plate having an approximately three inch diameter central hole, said support fixture comprising:

a generally flat planar plate-support platform cut from a sheet of double-face corrugated fiberboard, said platform having a lower surface and an upper surface and an inner edge defining a circular hole of predetermined size and a closed outer edge enclosing a surface area ranging between 15 to 300 square inches, said upper surface disposed to support a food plate;

a radially-symmetric cylindrical assembly having a lower end and an upper end and having a corrugated cylindrical outer surface disposed to be partially surrounded and gripped by the fingers and thumb of one hand, said cylindrical assembly further including:

a circular cylinder having a lower end and an upper end, said cylinder being a cylinder wall formed from an inner wrap and an over-lying narrower outer wrap of a single strip of single-face corrugated fiberboard, said cylinder wall having an outer corrugated surface with flutes running axially

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in the direction from lower end to upper end and an inner surface defining a central lumen of predetermined diameter, the upper end of said cylinder wall inner surface disposed to surround a lower portion of a beverage container, the lower end of said cylinder wall inner surface abruptly reduced in diameter by a folded-over ear of said inner wrap thereby forming an inner lip and ledge, said inner wrap protruding beyond said narrower outer wrap at the upper end of said cylinder wall to form a hub passing beyond a shoulder formed by the upper edge of said outer wrap, said hub disposed to fit through said circular hole in said plate-support platform and through a central hole in a supported food plate, said shoulder disposed to abut said plate-support platform lower surface;

a generally flat planar round lower bulkhead disk of predetermined diameter having a lower surface and an upper surface and a circular outer edge, said circular outer edge disposed to be surrounded by said cylinder wall inner surface, said lower surface disposed to be supported by said cylinder wall

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ledge, said upper surface disposed to support  
an axial spacer;  
an axial spacer having a lower surface and an upper  
surface, disposed to be surrounded by said cylinder  
wall inner surface, said lower surface disposed to  
be supported by said lower bulkhead disk upper  
surface, said spacer upper surface disposed to  
support an upper bulkhead disk a predetermined  
distance above said lower bulkhead disk;  
a generally flat planar round upper bulkhead disk of  
predetermined diameter having a lower surface and  
an upper surface and a circular outer edge, said  
circular outer edge disposed to be surrounded by  
said cylinder wall inner surface, said lower surface  
disposed to be supported by said axial spacer, said  
upper surface disposed to axially support a beverage  
container; and  
elastic means, surrounding said cylinder wall, for  
squeezing said inner wrap of single-face corrugated  
fiberboard between said outer wrap of single-face  
corrugated fiberboard and said outer edges of said  
lower and upper bulkhead disks.

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2. The support fixture of Claim 1 wherein said closed outer edge of said plate-support platform is circular and concentric with said circular hole of predetermined size, the diameter of the circular outer edge ranging from 5 to 19 inches.

3. The support fixture of Claim 2 wherein said lower and upper bulkhead disks are each cut from a sheet of double-face corrugated fiberboard.

4. The support fixture of Claim 3 wherein said elastic means for squeezing consists of two rubber bands, each rubber band surrounding said cylinder wall near each bulkhead location.

5. The support fixture of Claim 4 wherein said axial spacer is a coiled strip approximately 2 inches wide by 16 inches long of single-face corrugated fiberboard.

6. The support fixture of Claim 4 wherein said lower and upper bulkhead disks each have an approximately  $3/4$  inch diameter central hole.

7. The support fixture of Claim 5 wherein said lower and upper bulkhead disks each have an approximately  $3/4$  inch diameter central hole.

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8. A hand-held corrugated-fiberboard support fixture for supporting a beverage container and for supporting a food plate having an approximately three inch diameter central hole, said support fixture comprising:

- a generally flat planar plate-support platform cut from a sheet of double-face corrugated fiberboard, said platform having a lower surface and an upper surface and an inner edge defining a circular hole of predetermined size and a closed outer edge enclosing a surface area ranging between 15 to 300 square inches, said upper surface disposed to support a food plate;

- a radially-symmetric cylindrical assembly having a lower end and an upper end and having a corrugated cylindrical outer surface disposed to be partially surrounded and gripped by the fingers and thumb of one hand, said cylindrical assembly further including:

- a circular cylinder having a lower end and an upper end, said cylinder being a cylinder wall formed from an inner wrap and an over-lying narrower outer wrap of a single strip of single-face corrugated fiberboard, said cylinder wall having an outer corrugated surface with flutes running axially in the direction from lower end to upper end and an inner surface defining a central lumen of predeter-

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mined diameter, the upper end of said cylinder wall inner surface disposed to surround a lower portion of a beverage container, the lower end of said cylinder wall inner surface abruptly reduced in diameter by a folded-over ear of said inner wrap thereby forming an inner lip and ledge, said inner wrap protruding beyond said narrower outer wrap at the upper end of said cylinder wall to form a hub passing beyond a shoulder formed by the upper edge of said outer wrap, said hub disposed to fit through said circular hole in said plate-support platform and through a central hole in a supported food plate, said shoulder disposed to abut said plate-support platform lower surface; a cylindrical axial spacer of predetermined diameter and predetermined height made of rigid material, having a lower end and an upper end and a flat round lower surface and a flat round upper surface and a cylindrical surface spanning between said flat lower and flat upper surfaces disposed to be surrounded by said cylinder wall inner surface, said flat lower surface disposed to be supported by said cylinder wall ledge, said flat upper surface disposed to axially support a beverage container; and

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elastic means, surrounding said cylinder wall, for squeezing said inner wrap of single-face corrugated fiberboard between said outer wrap of single-face corrugated fiberboard and the cylindrical surface of said cylindrical axial spacer near the upper and lower ends of said spacer.

9. The support fixture of Claim 8 wherein said closed outer edge of said plate-support platform is circular and concentric with said circular hole of predetermined size, the diameter of the circular outer edge ranging from 5 to 19 inches.

10. The support fixture of Claim 9 wherein said elastic means for squeezing consists of two rubber bands, each rubber band surrounding said cylinder wall near each end of said cylindrical axial spacer.

11. A hand-held corrugated-fiberboard support fixture for supporting a beverage container and for supporting a food plate having an approximately three inch diameter central hole, said support fixture comprising:

a generally flat planar circular plate-support platform cut from a sheet of double-face corrugated fiberboard of 200 pounds per square inch burst test rating having

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size "C" flutes, said platform having a lower surface and an upper surface and an inner edge defining a central circular hole of approximately  $2 \frac{27}{32}$  inches in diameter and a circular outer edge ranging from 5 to 19 inches in diameter, said upper surface disposed to support a food plate;

a radially-symmetric cylindrical assembly having a lower end and an upper end and having a corrugated cylindrical outer surface disposed to be partially surrounded and gripped by the fingers and thumb of one hand, said cylindrical assembly further including:

a circular cylinder having a lower end and an upper end, said cylinder being a cylinder wall formed from an inner wrap and an over-lying narrower outer wrap of a single strip of single-face corrugated fiberboard, said single-face corrugated fiberboard having size "A" flutes and constructed of kraft paperboard having a basis weight within the range of 40 to 100 pounds per thousand square feet for both the fluted median and the facing, said single strip being bilaterally symmetrical and being approximately  $7 \frac{1}{2}$  inches wide to form the inner wrap then stepped down to approximately 5 inches wide to form the outer wrap, said single



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strip being approximately  $17 \frac{1}{4}$  inches long overall, the narrower portion being approximately 9 inches long, said cylinder wall having an outer corrugated surface with flutes running axially in the direction from lower end to upper end and an inner surface defining a central lumen of approximately  $2 \frac{21}{32}$  inches in diameter, the upper end of said cylinder wall inner surface disposed to surround a lower portion of a beverage container, the lower end of said cylinder wall inner surface abruptly reduced in diameter by a folded-over ear of said inner wrap thereby forming an inner lip and ledge, said inner wrap protruding beyond said narrower outer wrap at the upper end of said cylinder wall to form a hub approximately 3 inches in diameter by approximately  $1 \frac{1}{4}$  inches long passing beyond a shoulder formed by the upper edge of said outer wrap, said hub disposed to fit tightly through said circular hole in said plate-support platform and through a central hole in a supported food plate, said shoulder disposed to abut said plate-support platform lower surface;

a generally flat planar round lower bulkhead disk of approximately  $2 \frac{21}{32}$  inches in diameter cut from

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a sheet of double-face corrugated fiberboard of 200 pounds per square inch burst test rating having size "C" flutes, having a lower surface and an upper surface and a circular outer edge, said circular outer edge disposed to be surrounded by said cylinder wall inner surface, said lower surface disposed to be supported by said cylinder wall ledge, said upper surface disposed to support an axial spacer;

an axial spacer made from a strip of approximately 2 inch wide by approximately 16 inches long single-face corrugated fiberboard wrapped into a coil, said coil disposed to be surrounded by said cylinder wall inner surface, the lower coil surface disposed to be supported by said lower bulkhead disk upper surface, the coil upper surface disposed to support an upper bulkhead disk approximately 2 inches above said lower bulkhead disk;

a generally flat planar round upper bulkhead disk of approximately  $2 \frac{21}{32}$  inches in diameter cut from a sheet of double-face corrugated fiberboard of 200 pounds per square inch burst test rating having size "C" flutes, having a lower surface and an upper surface and a circular outer edge, said

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circular outer edge disposed to be surrounded by  
said cylinder wall inner surface, said lower surface  
disposed to be supported by said axial spacer, said  
upper surface disposed to axially support a beverage  
container; and

two number 64 size rubber bands each having a band  
cross section of approximately  $1/4$  inch by  $1/32$  inch  
and a flattened free length of approximately  $3 \frac{1}{2}$   
inches and meeting Federal Government General  
Services Administration Commercial Item Description  
A-A-131B, one rubber band surrounding said cylinder  
wall near said lower bulkhead location and one  
rubber band surrounding said cylinder wall near said  
upper bulkhead location, whereby said inner wrap of  
single-face corrugated fiberboard is squeezed  
between said outer wrap of single-face corrugated  
fiberboard and said outer edges of said lower and  
upper bulkhead disks.

12. The support fixture of Claim 11 wherein said lower and upper  
bulkhead disks each have an approximately  $3/4$  inch diameter  
central hole.

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13. A method for assembling pre-cut corrugated fiberboard components to construct a hand-held fixture for supporting a beverage container and a food plate, said method comprising the following operative steps:

laying a pre-cut strip of single-face corrugated fiberboard to be used in forming a cylinder wall corrugated side down on a flat surface;

selecting one of the protruding ears to be folded over;

flattening the flutes along the line where the selected ear is to be folded over;

folding the selected ear completely over in the direction that leaves the corrugated side of the ear exposed;

laying said pre-cut strip corrugated sided down once again on a flat surface with the folder-over ear exposed;

placing a cylindrical mandrel on the smooth surface of the pre-cut strip at the ear end of the strip oriented in the direction of the flutes with a round end of the mandrel near the edge of the folded-over ear;

placing a first bulkhead disk between the edge of the folded-over ear and the round end of the mandrel;

holding the first bulkhead disk against the round end of the mandrel with the thumb of one hand;

beginning rolling the pre-cut strip over the mandrel with the other hand;

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removing the hand holding the first bulkhead disk against  
the end of the mandrel;  
completing rolling the pre-cut strip two turns around the  
mandrel, whereby a cylinder is formed defining a  
central lumen and forming a hub and shoulder at the  
upper end;  
wrapping a first rubber band around the cylinder near the  
location of the first bulkhead;  
removing the mandrel;  
forming a spacer by rolling a strip of single-face corrugated  
fiberboard into a coil;  
inserting the spacer within the cylinder above the first  
bulkhead disk;  
inserting a second bulkhead disk above the spacer;  
wrapping a second rubber band around the cylinder near the  
location of the second bulkhead disk;  
bending the distal end of the cylinder hub inwards with the  
thumb of one hand while inserting the hub through the hole  
in a plate support platform;  
seating the plate support platform against the cylinder  
shoulder;  
inserting a mandrel through the hub into the cylinder,  
whereby the flutes of the hub are compressed tightly  
against and deformed to slightly overlap the distal edge

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of the hole in the platform so as to hold the platform in  
place;  
removing the mandrel, whereby the assembly of the fixture  
is completed.

14. The method of claim 13 wherein said mandrel consists of  
a 2 5/8 inch outside diameter metal beverage can.